Remarks

Examiner Pompey is thanked for the thorough Office Action.

In the Claims

Independent claims 6 and 11 have been amended to include the limitation "wherein the method does not include performing an oxygen implant into the substrate".

It is noted that claim 7 had been withdrawn and is now canceled.

Claim 10 has been amended as claim 14 had been previously amended to indicate the oxidizing environment is a dry oxidizing environment.

Claims 17 to 24 are new and have been added to better encompass the full scope and breadth of the invention notwithstanding the patentability of the original claims. Independent claim 17 and 21 correspond to independent claims the Examiner had previously indicated would be allowable in a phone call with Applicants' attorney circa December 4, 2003, i.e. by including the following limitations: 1) a lower temperature limit on the oxidation or oxidations of 950-1000°C; 2) an upper limit of

1200-1300°C; and 3) noting that the oxidizing steps are in a dry environment. Claims 18 to 20 and 22 to 24 essentially correspond to claims 8 to 10 and 12 to 14, respectively.

Claim Rejections

The Rejection Of Claims 6 To 16 [6 And 8 To 16] Under 35 U.S.C. §103(a) as Being Unpatentable Over Thakur et al. (U.S. Patent No. 5,712,186) In View Of Kim (U.S. Patent No. 3,853,496)

The rejection of claims 6 to 16 [6 and 8 to 16] under 35 U.S.C. §103(a) as being unpatentable over Thakur et al. (U.S. Patent No. 5,712,186) (the '186 Thakur Patent) in view of Kim (U.S. Patent No. 3,853,496) (the '496 Kim Patent) is acknowledged.

Applicants' wish to briefly point up the claimed features of their invention which are believed to be not shown nor obvious from the teachings of known references in this field.

New independent claims 17 and 21 both clearly define locally oxidizing a silicon (semiconductor) substrate through a patterned silicon nitride mask layer in a dry environment at a first temperature of from about 1200 to 1300°C to form FOX isolation layers which prevent out-gassing of nitrogen species from the silicon nitride mask and then oxidizing the silicon (semiconductor) substrate in a dry environment further at a second temperature of from about 950 to 1000°C. It is noted that the Examiner had previously indicated new independent claims 17 and 21 would

be allowable over the cited art of record and thus their respective dependent claims 18 to 20 and 22 to 24 are also allowable.

Pending independent claims 6 and 11 both clearly define locally oxidizing a silicon (semiconductor) substrate through a patterned silicon nitride mask layer at a first temperature above 1100°C to form FOX isolation layers which prevent out-gassing of nitrogen species from the silicon nitride mask and then oxidizing the silicon (semiconductor) substrate further at a second temperature no greater than 1100°C; wherein the method does not include performing an oxygen implant into the substrate.

The comments below therefore are directed essentially to claims 6 and 8 to 16.

The '186 Thakur specifically teaches, and claims, [A]n oxygen implantation step follow[ing] this preliminary oxidation step" (Col. 5, lines 29 and 30), i.e. a thermal oxidation in a "wet H_2O ambient at a temperature of between approximately 900 to 1,150 degrees Celsius" (Col. 5, lines 21 and 22) while the instant claimed invention in independent claims 6 and 11 does not employ such an oxygen implantation step. The '496 Kim Patent does not remedy this deficiency in Thakur.

Thus, independent claims 6 and 11 distinguish over the '186 Thakur Patent in view of the '496 Kim Patent under §103(a) for the above reasons and further because, inter alia: the prior art lack a suggestion that Thakur should be modified in a manner required to meet the claims; the invention is contrary to the teaching of the prior art—that is, the invention goes against the grain of what the prior art teaches; and the Examiner has not presented a convincing line of reasoning as to why the claimed subject matter as a whole, including its differences over the prior art, would have been obvious.

Claims 8 to 10 depend from independent claim 6; and claims 12 to 16 depend from independent claim 11; and are believed to distinguish over the combination for the reasons previously cited.

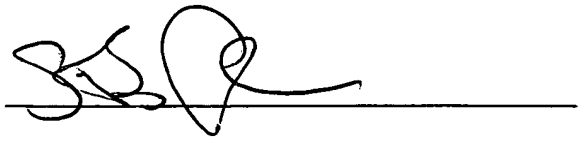
Therefore claims 6 and 8 to 24 are submitted to be allowable over the cited references and reconsideration and allowance are respectfully solicited.

CONCLUSION

In conclusion, reconsideration and withdrawal of the rejections are respectively requested. Allowance of all claims is requested. Issuance of the application is requested.

It is requested that the Examiner issue only written actions in this application.

Respectively submitted,



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